

The role of the Actuary in the Economy and in the Financial Sector

Yangon, Myanmar

14 July 2014

Chris Daykin, Chief Executive, IAA Fund



What is an Actuary?

An actuary is a professional person who applies mathematical skills to financial, business and social problems, especially those which involve uncertain future events



**Actuaries make financial
sense of the future**



The Actuary - a brief history

- Roman origins of name (*actuarius*)
- actuary of the Society for Equitable Assurances
- William Morgan, 1775-1830
- John Finlaison, government actuary 1822-1851
- Institute of Actuaries, London, 1848
- International Actuarial Association (IAA), 1895
- new constitution of the IAA, 1998
 - association of professional associations



Actuarial Training

- mathematics
- statistics
- economics and financial economics
- finance and financial mathematics
- modelling
- investment and asset/liability management
- financial management
- enterprise risk management
- professionalism



Major Fields of Actuarial Work

- life insurance
- general insurance
- reinsurance
- pensions
- social security
- investment
- financial engineering
- health care financing
- corporate finance
- government service
- regulation
- personal financial advice
- expert witness
- education and research
- enterprise risk management



What is a Profession?

6 key characteristics of a profession are:

- members join together to apply a **specialised skill**
- the skill has been developed through **appropriate education**
- members have a **special relationship** with those served
- recognised by the public as an **authority in field of expertise**, able to serve the public interest
- sets **standards of competence and conduct** of members
- **high level of integrity** by members in exercising judgement



How does the Profession serve the Public Interest?

- it ensures quality control of qualified actuaries through
 - initial qualifications and requirements
 - Continuing Professional Development
 - qualification standards or practising certificates
- it sets a code of conduct and technical standards
- it supports statutory roles by education and standards
- it investigates complaints against members
- it disciplines where there has been misconduct



Vision Statement of the IAA

The **vision** of the IAA is:

The actuarial profession is recognised worldwide as a major player in the decision-making process within the financial services industry, in the area of social protection and in the management of risk, contributing to the well-being of society as a whole.



Actuarial Skills

- mathematical modelling
- managing and communicating uncertainty
- evaluating financial consequences
- analysis and measurement of risk
- finance and financial economics
- scientific pricing and reserving techniques
- asset/liability management
- overall financial and risk management
- ...within a professional framework



Principles of Professionalism

- Integrity
- Competence and care
- Impartiality
- Compliance
- Communication



Role of Actuary in Financial Institution - 1

- design and pricing of products
- profitability of products
- pricing guarantees and options
- reserving for liabilities
- estimating fair value for accounts
- embedded value for shareholders



Role of Actuary in Financial Institution - 2

- solvency analysis
- financial condition reporting
- surplus distribution (e.g. bonus)
- asset/liability management
- investment strategy
- reinsurance/securitisation
- enterprise risk management



The Actuary as Risk Manager

- actuary can advise on wide range of risks
- especially in insurance companies...
- ...but also in other financial institutions
- modelling risk and uncertainty
- communicating risk to the Board
- enterprise risk management



Actuaries in Public Policy – 1

- financial services regulation and supervision
- design and financing of social security
- pensions policy, regulation and supervision
- public sector pension arrangements
- financing of health care and long-term care
- consumer credit
- modelling impact of demographic trends



Actuaries in Public Policy – 2

- assessment of compensation, e.g. for injury
- appraisal and financing of capital projects
- modelling catastrophes and epidemics
- assessing long-term liabilities, eg toxic waste
- implications of global warming
- evaluating costs associated with environmental damage



Actuarial Roles in Social Security

- demographic projections
- estimates of future benefit outgo
- estimates of future contribution income
- long-term projections of financial balance
- short/medium-term estimates of cash-flow
- development of funding strategies



Actuarial Advice for Government

- informal discussions with actuaries or the profession
- individual actuaries on government working parties
- consulting contracts
- actuaries employed by government departments
- shared actuarial services between departments
- government actuary's office or department



UK Government Actuary's Department

- independent source of actuarial advice
- carries weight with the industry
- interface with actuarial profession
- easier to recruit and retain actuaries
- available for all areas of government



Actuarial Roles in Defined Benefit Pensions

- scheme design
- advising on level of contributions
- funding and solvency management
- asset/liability management
- transfers and individual options



Actuarial Roles in Individual Account Pension Systems

- level of contributions needed
- expense disclosure
- pricing and reserving for guarantees
- asset/liability management
- pricing and reserving for annuities
- design of alternative draw-down methods



Actuaries in Investment

- portfolio management
- research and analysis
- portfolio performance measurement
- asset/liability management
- strategic asset allocation
- complex financial instruments



Actuaries in Health & Care

- projecting future costs
- design of financing mechanisms
- financing long-term care
- cost-benefit analysis of treatments
- financial appraisal of alternative strategies
- design of performance indicators



Corporate Finance

- appraisal of capital projects
- risk analysis and control
- innovative financing mechanisms
- performance indicators and measurement



Assessment of Damages in Courts

- value of loss of earnings
- value of dependency
- cost of care
- pension loss
- mitigation of loss of earnings



Other roles

- micro-insurance
- utility pricing
- mobile phone contracts
- managing carbon credits
- valuing all sorts of long-term liabilities



What does society gain from having an actuarial profession?

- access to specialist skills
- quality control of experts
- high standards of actuarial service
- integrity and objectivity in advice
- input into public debate
- support for statutory roles



Role of Actuarial Professional Body

- requirements for initial education
- qualification standards
- continuing professional development
- standards of practice
- interface with regulatory bodies
- promotion of the profession
- disciplinary framework



What makes a successful actuary?

- integrity and objectivity
- problem-solving ability
- comfortable with mathematics
- ability to see the broader picture
- good communication skills
- able to work with others in a team



How to become a good actuary?

- work hard and focus 100% on studies
- learn the principles thoroughly
- understand rather than memorise
- prepare well for exams and practise a lot
- answer the questions (read them carefully!)



Actuaries

The Best-Kept Secret in Business™

Turn Risk Into Opportunity™

